PELCO

by Schneider Electric

INSTALLATION

AUD-1 Audio and ALM-1 Alarm Accessories

External Audio and Alarm Accessories

C2985M-A (3/11)

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Important Notices

LEGAL NOTICE

SOME PELCO EQUIPMENT CONTAINS, AND THE SOFTWARE ENABLES, AUDIO/VISUAL AND RECORDING CAPABILITIES, THE IMPROPER USE OF WHICH MAY SUBJECT YOU TO CIVIL AND CRIMINAL PENALTIES. APPLICABLE LAWS REGARDING THE USE OF SUCH CAPABILITIES VARY BETWEEN JURISDICTIONS AND MAY REQUIRE, AMONG OTHER THINGS, EXPRESS WRITTEN CONSENT FROM RECORDED SUBJECTS. YOU ARE SOLELY RESPONSIBLE FOR INSURING STRICT COMPLIANCE WITH SUCH LAWS AND FOR STRICT ADHERENCE TO ANY/ALL RIGHTS OF PRIVACY AND PERSONALTY. USE OF THIS EQUIPMENT AND/OR SOFTWARE FOR ILLEGAL SURVEILLANCE OR MONITORING SHALL BE DEEMED UNAUTHORIZED USE IN VIOLATION OF THE END USER SOFTWARE AGREEMENT AND RESULT IN THE IMMEDIATE TERMINATION OF YOUR LICENSE RIGHTS THEREUNDER.

REGULATORY NOTICES

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

In order to maintain compliance with FCC regulations shielded cables must be used with this equipment. Operation with non-approved equipment or unsheilded cables is likely to result in interference to radio and television reception.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Description

The AUD-1 and ALM-1 are external accessories that can be connected directly to the accessory port of compatible Pelco devices. The AUD-1 is compatible with Spectra® HD Series dome systems and all Sarix® camera models that do not have built-in audio. The ALM-1 is compatible with Spectra HD Series dome systems and all Sarix camera models.

The AUD-1 audio accessory is designed to work with microphones that have an internal preamplifier and provide a line-level output. The AUD-1 encodes audio from the microphone into a digital G.711 format. The audio can be streamed with the video to be played back and recorded at the headend. The AUD-1 can also receive the G.711 digital audio from the headend and convert it to an analog signal to be played through a speaker.

The ALM-1 alarm accessory features four alarm inputs, one auxiliary (Form C) relay output, and one open collector auxiliary output that can be alternatively configured to operate on alarm. Up to four ALM-1 alarm accessories can be configured for one device, which may require a USB hub. Each accessory is automatically recognized and configured by the Pelco device.

The audio and alarm accessories can be used simultaneously; however, if the Pelco device has only one accessory port, a USB hub is required.

NOTE: The ALM-1 accessory is not supported by DS ControlPoint.

MODELS

AUD-1	External audio accessory
ALM-1	External alarm accessory

PARTS LIST

The following parts are supplied:

Qty	Description
1	AUD-1 audio accessory or ALM-1 alarm accessory
1	Left-angle USB cable (for use with Sarix IM Series cameras)
1	Mini USB cable (for use with Sarix IX and ID Series cameras)

USER-SUPPLIED PARTS LIST

The following tool is needed but not supplied:

Qty	Description
1	1.4 mm or 2.0 mm screwdriver

Installation

1. Locate the camera's USB accessory port.
2. Connect the accessory appropriate for one of the following camera types:
   - **IE Series and Spectra HD Series:** Connect the accessory directly to the camera's USB accessory port.

     NOTE: For Spectra HD Series cameras, the ALM-1 alarm accessory must be connected to the accessory port closest to the dome drive when installed (refer to Figure 1).
   - **IX Series and ID Series:** Connect the mini USB cable (supplied) to the accessory, and then connect it to the camera's USB accessory port.
   - **IM Series:** Connect the left-angle USB cable (supplied) to the accessory, and then connect it to the camera's USB accessory port.

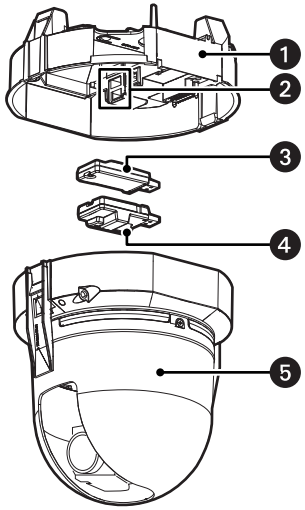

Figure 1. Installing the AUD-1 and ALM-1 into a Spectra HD Series Camera

1. Spectra HD Dome Drive Receiver (located inside the back box)
2. USB Ports
3. AUD-1 Audio Accessory
4. ALM-1 Alarm Accessory
5. Spectra HD Dome Drive

3. Connect the appropriate wiring (refer to *Wiring* on page 6).
4. Log on to the host camera, and enable the camera's audio or alarm streams as needed. Refer to the installation/operation manual shipped with the camera for complete instructions.

NOTE: Improper use of audio/visual recording equipment may subject you to civil and criminal penalties. Applicable laws regarding the use of such capabilities vary between jurisdictions and may require, among other things, express written consent from the recorded subjects. You are solely responsible for insuring strict compliance with such laws and for strict adherence to any/all rights of privacy and personalty.

Wiring

AUDIO

NOTES:

- The maximum recommended cable length for the audio wiring is 304.8 m (1,000 ft).
- The AUD-1 is designed to work with microphones that have an internal preamplifier and provide professional line-level output (+4 dBu).
- If your microphone requires more than 12 VDC power, you will need to use a separate power line to power the microphone unit.
- If your microphone is a consumer line-level device (–10 dBu), the audio output may be quieter than you expect. Mic-level devices are not recommended as they must be amplified to a line-level signal, which often results in excessive noise.

To connect the wiring for the AUD-1:

1. Connect UTP wiring from an external microphone to pins 2 and 3 of the AUD-1 TB2 connector.
2. To supply power to the microphone, connect UTP wiring to the power terminals of the microphone and terminate them at pins 1 (12 VDC) and 4 (return) of the AUD-1 TB2 connector.
3. Connect UTP wiring from the external speakers to pins 1 and 2 of the AUD-1 TB1 connector.

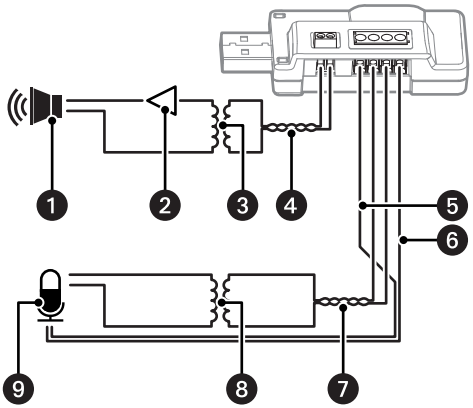

Figure 2. Wiring the AUD-1

1. Speaker
2. Amplifier
3. 600-Ohm Impedance Matching Transformer
4. UTP Wiring
5. +12 V Wire
6. 0 V (zero volt) Return Wire
7. UTP Wiring
8. 600-Ohm Impedance Matching Transformer
9. Line-Level Microphone

ALARM

1. Connect one wire of a UTP wire pair from each of your alarm input switches to pins 1 to 4 of the ALM-1 TB1 connector.
2. Connect the remaining wire of the UTP wire pair from your each of your alarm input switches to a wire nut or terminal block, and then run a single wire to the return pin 5 of the ALM-1 TB1 connector.
3. Connect UTP wiring from your alarm output devices to the AUD-1 TB2 connector.

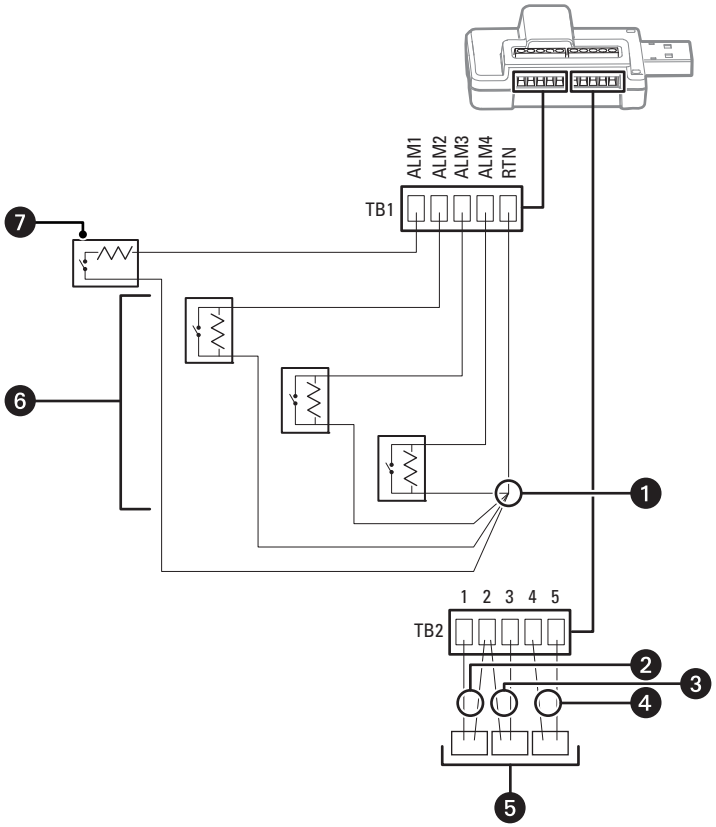

Figure 3. Wiring the ALM-1

1. Common Return
2. N.C. Wire Pair
3. N.O. Wire Pair
4. Solid-State Relay Wire Pair
5. Customer Relay Devices
6. N.O. Alarm Input Switches
7. N.C. Alarm Input Switches

CONNECTING A RELAY DEVICE

The ALM-1 has four outputs for activating external devices. It supports both momentary and continuous relay operation.

You can operate the relays interactively during an active connection, or they can operate automatically to coincide with certain events. Typical applications include turning on lights or other electrical devices or activating a door, gate, or lock.

⚠ **WARNING:** Do not exceed the maximum relay ratings of 40 V, 2 A, or 60 W.

CONNECTING ALARMS

The ALM-1 provides four alarm inputs for external signaling devices, such as door contacts or motion detectors. Both normally open and normally closed devices are supported.

Supervised Alarms

When an alarm is configured as a supervised alarm, the ALM-1 maintains a constant electrical current through the alarm circuit (3.3 VDC, 1 kohm). If the alarm circuit length changes, due to an electrical short or a bypass, the voltage fluctuates from its normal state and activates an alarm.

NOTE: Install the 1-kohm resistor as close to the switch as possible.

Figure 4 illustrates the alarm and no alarm conditions of a supervised alarm input. Whether the alarm is normally closed or normally open, neither a cut nor a bypass can defeat these alarms.

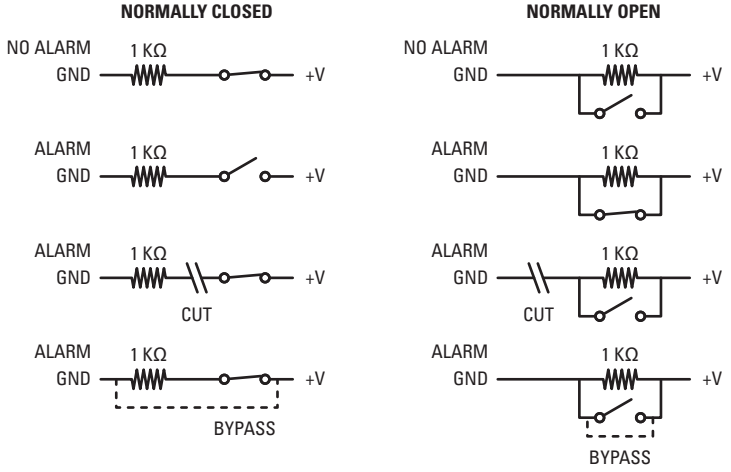

Figure 4. Supervised Alarm Conditions

Figure 5 illustrates the wiring configuration for supervised alarm inputs.

Figure 5. Supervised Alarm Input Wiring

Unsupervised Alarms

When an alarm is configured as an unsupervised alarm, an alarm is only activated when the normal alarm state (open or closed) changes.

Figure 6 illustrates the alarm and no alarm conditions of an unsupervised alarm input.

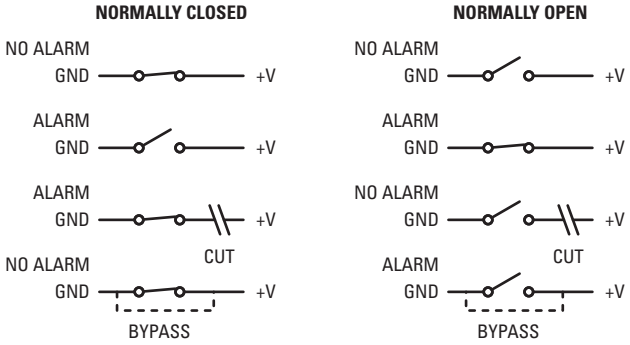

Figure 6. Unsupervised Alarm Conditions

Figure 7 illustrates the wiring configuration for unsupervised alarm inputs.

Figure 7. Normally Closed and Normally Open Unsupervised Alarm Input Wiring

NOTE: A normally closed alarm input can be defeated with a bypass; a normally open input can be defeated with a cut.

Alarm Connections

Figure 8 shows how to wire the ALM-1 to an alarm.

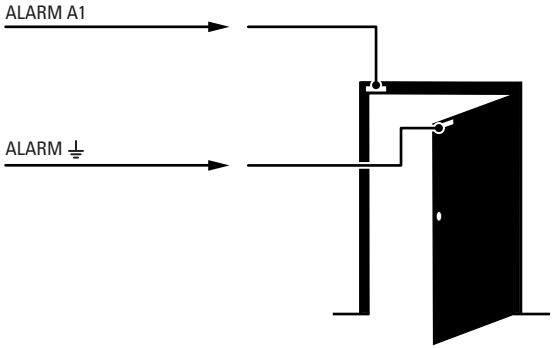

Figure 8. Alarm Connections

Troubleshooting

If the following instructions fail to solve your problem, contact Pelco Product Support at 1-800-289-9100 (USA and Canada) or +1-559-292-1981 (international) for assistance. Be sure to have the serial number available when calling.

Do not try to repair the unit yourself. Leave maintenance and repairs to qualified technical personnel only.

Table A. Troubleshooting the AUD-1 and the ALM-1

Problem	Possible Cause	Suggested Solution
Cannot enable the accessory.	The accessory is not correctly installed.	Ensure that the accessory is installed completely and correctly.
	The accessory is not enabled.	Enable the accessory.
	The accessory settings were not saved.	Save the settings after configuring the accessory.
The AUD-1 does not respond.	There is a problem with the wiring.	Ensure that the wiring is properly installed.
	The sampling rate is set incorrectly.	Set the sampling rate to 8 kHz.
	The microphone you are using is not a line-level device.	Use a line-level microphone.
The audio signal is weak.	There is no power to the microphone.	Apply power to the microphone (refer to *Wiring* on page 6).
	There is no speaker amplification.	Ensure that the line out wiring includes an amplifier.
	You are not using the correct type of transformer.	Use a 600-ohm impedance matching transformer.
	The wiring distance between the audio equipment may be too long.	Test the equipment using a shorter wiring distance.
	The gain is not properly adjusted.	If you are using an external amplifier and it has an adjustable gain, increase the gain until the signal is acceptable.
	You are using a consumer line-level microphone.	Use a professional line-level microphone.
		Add an external amplifier to your circuit and or adjust the gain.
The audio signal is noisy.	You are using a mic-level microphone rather than a line-level microphone.	Use a line-level microphone.
		Add an external amplifier that will bring the signal to line level.

Specifications

AUD-1

GENERAL

Compression	G.711
Sampling Rate	8 kHz
Bit Rate	64 kbps (8 kHz)
Dimensions	62.2 x 29.2 x 16.0 mm (2.45" L x 1.15" W x 0.63" H)
Weight	0.02 kg (0.04 lb)

ELECTRICAL

Power Input	5 VDC powered from USB

MECHANICAL

Audio Input	UTP 600 ohms mono using 4X terminal block (screw connection) with balanced line input and 12 VCD power source
Audio Output	UTP 600 ohms mono using 2X terminal block (screw connection) with balanced line output
Connector	USB 2.0 'A' male

ENVIRONMENTAL

Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	–20° to 60°C (–4° to 140°F)

ALM-1

GENERAL

Dimensions	59.2 x 31.8 x 17.2 mm (2.33" L x 1.25" W x 0.68" H)
Weight	0.02 kg (0.04 lb)

ELECTRICAL

Power Input	5 VDC powered from USB
Power Requirement	100 mW (17 mA, 5 V)
Mechanical Relay Limits	
Switching Load	60 W maximum continuous power dissipation
Maximum Current	2 A
Maximum Voltage	<40 V
Solid State Relay Limits	
Maximum Continuous Current	150 mA
Maximum Voltage	32 VDC

MECHANICAL

Alarm Input	Cat5 cable or 26 gauge wire
Auxiliary Input/Output	Cat5 cable or 26 gauge wire
Connector	USB 2.0 'A' male

ENVIRONMENTAL

Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	–20° to 60°C (–4° to 140°F)

Green The materials used in the manufacture of this document and its components are compliant to the requirements of Directive 2002/95/EC.

This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years:
  - Fiber optic products
  - Unshielded Twisted Pair (UTP) transmission products
  - CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models
- Three years:
  - Pelco-designed fixed network cameras and network dome cameras with Sarix™ technology.
  - Pelco-branded fixed camera models (CCC1390H Series, C10DN Series, C10CH Series, and IP3701H Series)
  - EH1500 Series enclosures
  - Spectra® IV products (including Spectra IV IP)
  - Camclosure® Series (IS, ICS, IP) integrated camera systems
  - DX Series digital video recorders (except DX9000 Series which is covered for a period of one year), DVR5100 Series digital video recorders, Digital Sentry® Series hardware products, DVX Series digital video recorders, and NVR300 Series network video recorders
  - Endura® Series distributed network-based video products
  - Genex® Series products (multiplexers, server, and keyboard)
  - PMCL200/300/400 Series LCD monitors
  - PMCL5xx Series FHD monitors
- Two years:
  - Standard varifocal, fixed focal, and motorized zoom lenses.
  - DF5/DF8 Series fixed dome products
  - Legacy® Series integrated positioning systems
  - Spectra III™, Spectra Mini, Spectra Mini IP, Esprit®, ExSite®, and PS20 scanners, including when used in continuous motion applications.
  - Esprit Ti and TI2500 Series thermal imaging products
  - Esprit and WW5700 Series window wiper (excluding wiper blades).
  - CM6700/CM6800/CM9700 Series matrix
  - Digital Light Processing (DLP®) displays (except lamp and color wheel). The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
  - Intelli-M® eIDC controllers
- One year:
  - Video cassette recorders (VCRs), except video heads. Video heads will be covered for a period of six months.
- Six months:
  - All pan and tilts, scanners, or preset lenses used in continuous motion applications (preset scan, tour, and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to a Pelco designated location. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental, or consequential damages (including loss of use, loss of profit, and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, sales order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product that does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

To expedite parts returned for repair or credit, please call Pelco at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair) and designated return location.

All merchandise returned for credit may be subject to a 20 percent restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid.

2-10-10

REVISION HISTORY

Manual #	Date	Comments
C2985M	2/11	Original version.
C2985M-A	3/11	Revised the ALM-1 accessory note in *Description*.

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